

The inventors fabricated a first sleeve having a structure as defined in claim 1 of the present application, and a second sleeve fabricated by electroforming. The first and second sleeves had the same size. Then, the inventors conducted a fatigue test to the first and second sleeves. In the fatigue test, a load was repeatedly applied to the first and second sleeves, until the sleeves were broken. The results are shown in the attached graph.

As can be seen in the attached graph, the second sleeve broke at about 1×10^5 cycles. In contrast, the first sleeve did not break after 1×10^6 cycles. This shows that a spinning-working product has much higher resistance to fatigue breakage than a electroforming product.¹

The above described comparative tests demonstrate that Applicants claimed product as specified by claim 1 is both different from and superior to the eletroformed product of Hori et al.

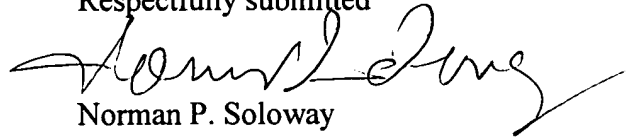
Similar comments apply to independent claims 16 and 18, which include similar limitations as claim 1. Claims 2 and 5, which depend on claim 1, also are allowable for the same reasons above reduced relative to claim 1, as well as for their own additional limitations.

Having dealt with all the objections raised by the Examiner, the application is believed to be in order for allowance.

¹ A Rule 132 Declaration attesting to the foregoing is being executed and will be filed under letter.

In the event there are any fee deficiencies or additional fees are payable, please charge them to our deposit account number 08-1391.

Respectfully submitted



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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 8, 2003 at Tucson, Arizona.

By 

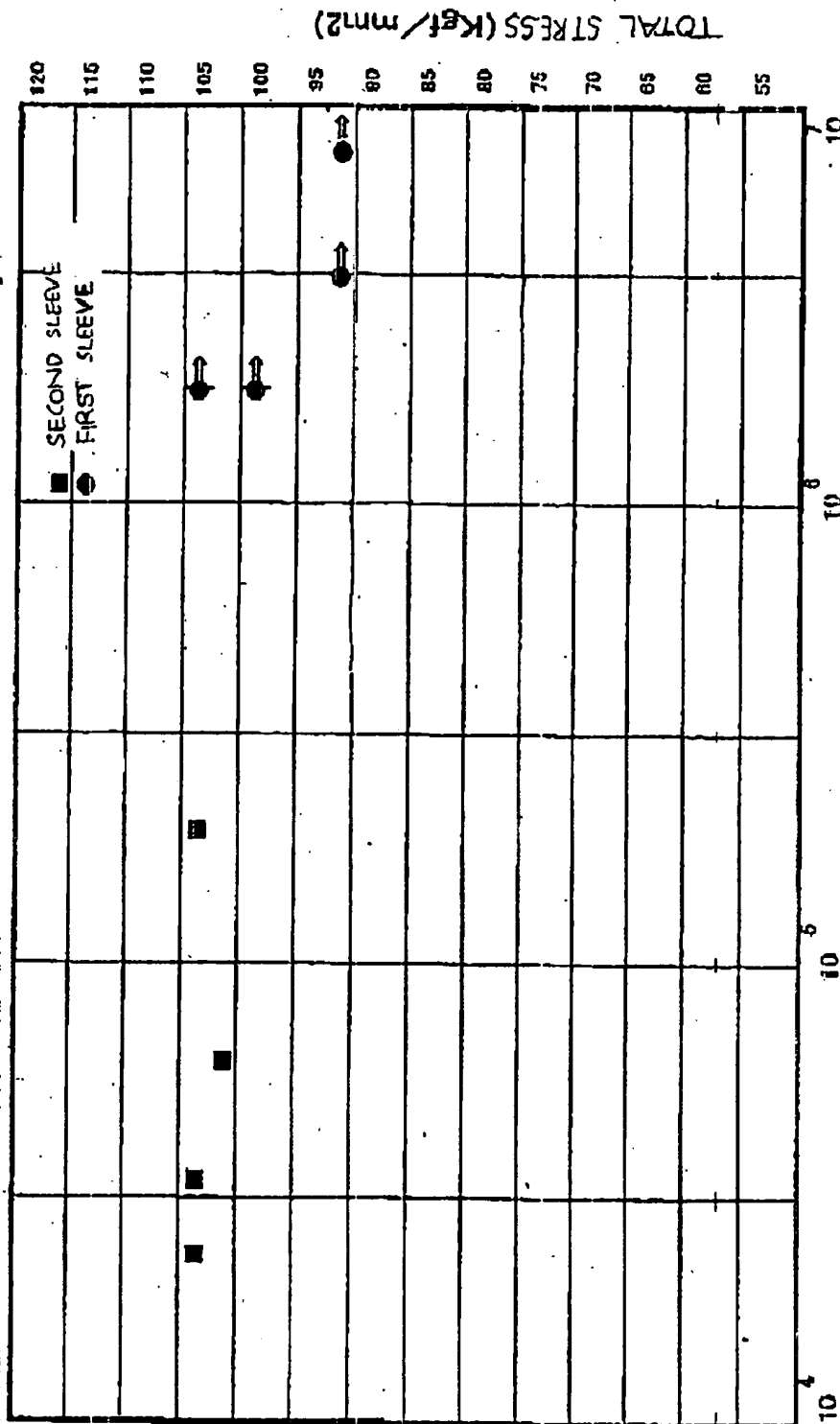
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<FATIGUE CURVE>



■ : BREAKAGE
 ●→ : TEST ENDS BECAUSE
 SAMPLE IS NOT BROKEN

LOAD-APPLICATION CYCLES (S-N CURVE)

